

## (57) Abstract

5 A novel strategy for directed evolution of nucleic acids and proteins is described,  
in which target nucleic acid is copied by a polymerase devoid of proofreading  
function. Advantageous mutations generated during this process are recovered  
using an appropriate selection or screening procedure. The invention provides  
fast, inexpensive and non-laborious methods for practicing said strategy, which  
are utilized either separately or in combination with other methods for  
engineering biopolymers with desired properties. The invention furthermore  
10 provides kits for directed evolution according to the described methodology. In  
an aspect, the invention discloses methods and kits for producing nucleic acids  
encoding proteins with desired properties.